IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1.   (Currently Amended) A join process for a wireless mesh topology network where network nodes have multiple spatial coverage sub-sectors together covering a larger sector angle, where a node can establish connection with other nodes located in directions covered by its sub-sectors, the join process for adding a joining node to the network comprising:

the a joining node starts listening to its sub-sectors at specific receiving frequencies for a defined time and thereafter changes changing its sub sectors and its receiving frequencies according to a defined timing and sequence; and,

active network nodes transmit transmitting organized invitation data packets on defined sectors, frequencies and timing, based on their relative location and relative angle orientation possible connectivity to the joining node deduced from sub-sectors already used for existing internal network communication, thus reducing frequency interference and reducing time required for the join process.

2.   (Currently Amended) The join process of claim 1 further comprising:
one active network node distributes distributing the schedule for the organized invitation data packets to other active network nodes.

3.   (Currently Amended) The join process of claim 1 further comprising:
an external computer which distributes distributing the schedule for the organized invitation data packets to the network nodes.

4.   (Original) The join process of claim 1 further comprising:
communicating using only a single sector which covers a single spatial sector from one active network node having a single spatial coverage sub-sector.

5. – 36.   (Cancelled)

37.   (Original) A method for adding a joining node to a wireless mesh network including one or more network nodes, the method comprising:

designating at least one network node for initiating communication with the joining node;

at the at least one network node, to initiate communication with the joining node, scanning on a first sector with highest probability of locating the joining node;

subsequently scanning on sectors of lower probability of locating the joining node; and

receiving an answer at a network node in response to an invitation packet.

38.   (Original) The method of claim 37 wherein subsequently scanning comprises:

scanning on sectors immediately adjacent to the first sector; and

subsequently scanning on sectors immediately adjacent to the sectors immediately adjacent to the first sector.

39.   (Original) The method of claim 37 wherein subsequently scanning comprises:

skipping scanning on sectors immediately adjacent sectors already scanned; and

subsequently scanning on sectors immediately adjacent to the skipped sectors.

40.   (Original) The method of claim 37 further comprising:

receiving information about location of the joining node;

based on the information about location of the joining node, identifying the first sector with highest probability of locating the joining node.

41.   (Original) The method of claim 37 further comprising:

receiving information about location of the joining node;

based on the information about location of the joining node, identifying those network nodes with highest probability of locating the joining node; and

assigning each identified network node to transmit in the direction of the location of the joining node.

42.   (Original) The method of claim 37 further comprising:

transmitting an invitation transmission from the at least one network node; and

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synchronizing at least one of time, direction and frequency of the invitation transmission by the at least one network node to avoid interference at the joining node.

43.   (Currently Amended) A method for admitting one or more joining nodes to a wireless mesh network, the method comprising:

scheduling transmission of data packets by inviting network nodes on defined frequency channels and at defined directions to create spectral activity for detection of the spectral activity by the one or more joining nodes; and

at a joining node of the one or more joining nodes,

scanning the defined frequency channels and [[at]] different spatial directions to identify radio frequency activity of the inviting network nodes at the defined frequency channels,

identifying spatial directions toward the inviting network nodes, and

tuning to a defined frequency channel in the identified spatial direction to receive an invitation packet transmitted by the inviting network nodes between the data packets.

44.   (Original) The method of claim 43 wherein transmission of data packets comprises:

transmitting a radio frequency activity burst of information at a defined frequency channel and in one or more defined spatial directions.

45.   (Original) The method of claim 43 wherein the data packets comprise short bursts of data, have a duration shorter than duration of the invitation packets and are transmitted more frequently than the invitation packets.